

Attorney's Docket No. 1033528-000025

Application No. 10/551,032

Page 2

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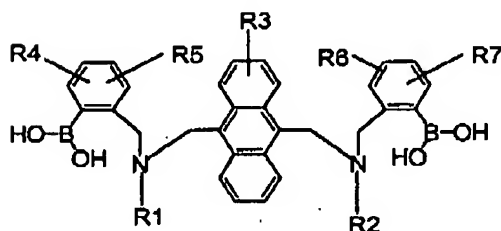
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. - 25. (Canceled)

26. (Previously Presented) A compound of the formula :



wherein:

at least one of R1 and R2 is a linker arm, and the other is independently selected from the group consisting of linker arms and non-linker substituents; where the linker arm is a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₃₀ or fewer, and is covalently bonded to a solid substrate; where the non-linker substituent is hydrogen, or a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₂₀ or fewer;

R3 is selected from the group consisting of halogen, acyl, alkyloxy, nitro, carboxylic acid, and carboxylic acid ester.

and R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, substituted alkyl, acyl, alkyloxy, and halogen.

27. (Previously Presented) The compound of claim 26, wherein said acyl group is acetyl.

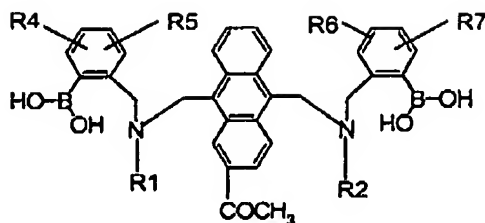
28. (Previously Presented) The compound of claim 26, wherein the linker arm covalently bound to a solid substrate includes a polypropyleneglycol spacer between the saccharide dye and the solid substrate.

29. (Previously Presented) The compound according to claim 26, wherein the solid substrate is a biocompatible polymer selected from the group consisting of cellulose, polystyrene, polyamide, polyethersulfone, polyethyleneglycol, polypropyleneglycol, polyvinylalcohol, polysiloxane, nylon, and copolymers thereof.

30. (Previously Presented) The compound of claim 26, having a fluorescence excitation peak and emission peak upon saccharide conjugation, and wherein the excitation peak and the emission peak differ by at least about 40 nm.

31. (Previously Presented) The compound of claim 26, wherein relative intensity of fluorescence of the molecule upon saccharide conjugation is greater than about 1.5 across the physiological range of glucose concentration.

32. (Previously Presented) A compound of the formula :



wherein:

at least one of R1 and R2 is a linker arm, and the other is independently selected from the group consisting of linker arms and non-linker substituents; where the linker arm is a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₃₀ or fewer, and is covalently bonded to a solid substrate; where the non-linker substituent is hydrogen, or a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₂₀ or fewer;

and R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, substituted alkyl, acyl, alkyloxy, and halogen.

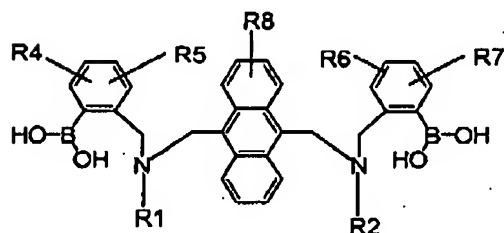
33. (Previously Presented) The compound of claim 32, wherein the linker arm covalently bound to a solid substrate includes a polypropyleneglycol spacer between the saccharide dye and the solid substrate.

34. (Previously Presented) The compound according to claim 32, wherein the solid substrate is a biocompatible polymer selected from the group consisting of cellulose, polystyrene, polyamide, polyethersulfone, polyethyleneglycol, polypropyleneglycol, polyvinylalcohol, polysiloxane, nylon, and copolymers thereof.

35. (Previously Presented) The compound of claim 32, having a fluorescence excitation peak and emission peak upon saccharide conjugation, and wherein the excitation peak and the emission peak differ by at least about 40 nm.

36. (Previously Presented) The compound of claim 32, wherein relative intensity of fluorescence of the molecule upon saccharide conjugation is greater than about 1.5 across the physiological range of glucose concentration.

37. (Previously Presented) A compound of the formula :



wherein:

R1 and R2 are the same or different, and are selected from the group consisting of hydrogen, and a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₂₀ or fewer;

and R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, substituted alkyl, acyl, alkyloxy, and halogen; and

R8 is a linker-arm that is a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₃₀ or fewer.

38. (Previously Presented) The compound of claim 37, wherein said linker arm contains one or more functional groups selected from the group consisting of amide and ester.

39. (Previously Presented) The compound of claim 37, wherein the linker arm is covalently bound to a solid substrate, and the linker arm includes a polypropyleneglycol spacer between the saccharide dye and the solid substrate.

40. (Previously Presented) The compound according to claim 37, wherein the solid substrate is a biocompatible polymer selected from the group consisting of cellulose, polystyrene, polyamide, polyethersulfone, polyethyleneglycol, polypropyleneglycol, polyvinylalcohol, polysiloxane, nylon, and copolymers thereof.

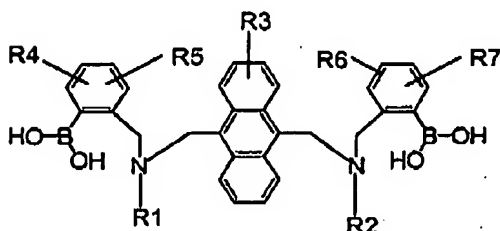
41. (Previously Presented) The compound of claim 37, having a fluorescence excitation peak and emission peak upon saccharide conjugation, and wherein the excitation peak and the emission peak differ by at least about 40 nm.

42. (Previously Presented) The compound of claim 37, wherein relative intensity of fluorescence of the molecule upon saccharide conjugation is greater than about 1.5 across the physiological range of glucose concentration.

43. (Previously Presented) A method for immobilizing a compound on a solid substrate, comprising reacting an amino-terminated hydrocarbon with a solid

substrate activated with a functional group selected from the group consisting of carboxyl, carbonyl, cyanogenbromide, epoxy, and isocyanate;

wherein the amino-terminated hydrocarbon is a compound of the formula:



wherein:

R1 and R2 are independently selected from the group consisting of: hydrogen, amino-terminated hydrocarbons of about C₃₀ or fewer, and a hydrocarbon of about C₃₀ or fewer, such that at least one of R1 and R2 is an amino-terminated hydrocarbon;

R3 is selected from the group consisting of halogen, acyl, alkyloxy, nitro, carboxylic acid, and carboxylic acid ester; and

R4, R5, R6, and R7 are the same or different, and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, acyl, alkyloxy, and halogen.

44. (Previously Presented) The method of claim 43, wherein the activated polymer is cross-linked with ethylenediamine.

45. (Currently Amended) A sensor for detecting the concentration of saccharide in a biological fluid, said sensor comprising one or more compounds selected from the group consisting of compounds of claim 26 ~~claims 26, 32, and 37~~.

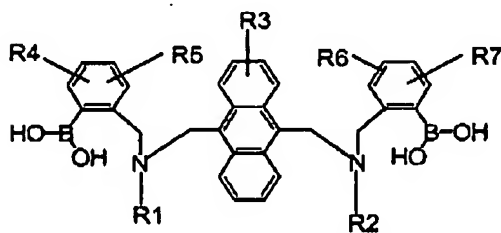
46. (Currently Amended) A method for detecting the concentration of saccharide in a biological fluid comprising:

constructing a sensor comprising one or more compounds of the group consisting of the compounds of claim 26 ~~claims 26, 32, and 37~~;

contacting the sensor with the biological fluid; and

measuring relative intensity of fluorescence of the compound.

47. (Previously Presented) A method for Immobilizing a compound on a solid substrate, comprising reacting a carboxyl-terminated hydrocarbon with an amino-activated solid substrate, wherein the carboxyl-terminated hydrocarbon is a compound of the formula:



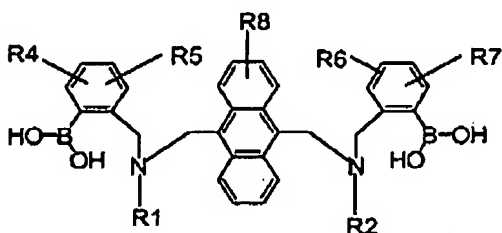
wherein:

R1 and R2 are independently selected from the group consisting of: hydrogen, carboxyl-terminated hydrocarbons of about C₃₀ or fewer, and a hydrocarbon of about C₃₀ or fewer, such that at least one of R1 and R2 is a carboxyl-terminated-hydrocarbon;

R3 is selected from halogen, acyl, alkyloxy, nitro, carboxylic acid, and carboxylic acid ester; and

R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, acyl, alkyloxy, and halogen.

48. (Previously Presented) A method for immobilizing a compound on a solid substrate comprising reacting an amino-terminated hydrocarbon with a solid substrate that is activated with a functional group selected from the group consisting of carboxyl, carbonyl, cyanogenbromide, epoxy, and isocyanate, and wherein the amino-terminated hydrocarbon is a compound of the formula :



wherein:

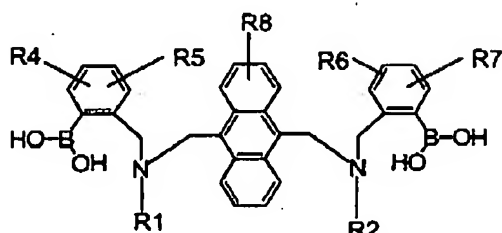
R1 and R2 are the same or different, and are a hydrogen, or a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₂₀ or fewer;

and R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, substituted alkyl, acyl, alkyloxy, and halogen; and

R8 is an amino-terminated hydrocarbon of about C₃₀ or fewer.

49. (Previously Presented) A method for immobilizing a compound on a solid substrate comprising reacting a carboxyl-terminated hydrocarbon with an

amino-activated solid substrate, wherein the carboxyl-terminated hydrocarbon is a compound of the formula :



wherein:

R1 and R2 are the same or different, and are a hydrogen, or a saturated or unsaturated, substituted or unsubstituted, hydrocarbon of about C₂₀ or fewer;

and R4, R5, R6, and R7 are the same or different, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, arylalkyl, substituted alkyl, acyl, alkyloxy, and halogen; and

R8 is a carboxyl-terminated-hydrocarbon of about C₃₀ or fewer.

50. (New) A sensor for detecting the concentration of saccharide in a biological fluid, said sensor comprising one or more compounds selected from the group consisting of compounds of claim 32.

51. (New) A method for detecting the concentration of saccharide in a biological fluid comprising:

constructing a sensor comprising one or more compounds of the group consisting of the compounds of claim 32;

contacting the sensor with the biological fluid; and

measuring relative intensity of fluorescence of the compound.

52. (New) A sensor for detecting the concentration of saccharide in a biological fluid, said sensor comprising one or more compounds selected from the group consisting of compounds of claim 37.

53. (New) A method for detecting the concentration of saccharide in a biological fluid comprising:

constructing a sensor comprising one or more compounds of the group consisting of the compounds of claim 37;

contacting the sensor with the biological fluid; and

measuring relative intensity of fluorescence of the compound.